

Pushing the Envelope			
2002 Mathematics			
Content Standards			
New Mexico Mathematics			
Grade 5			
Activity/Lesson	State	Standards	
History of Aviation Propulsion (pgs. 5-9)	NM	MA.5.5.M.2.1	Solve measurement problems using appropriate tools involving length, perimeter, weight, capacity, time, and temperature.
History of Aviation Propulsion (pgs. 5-9)	NM	MA.5.5.M.2.2	Select and use strategies to estimate measurements including length, distance, capacity, and time.
Chemistry (pgs. 25-41)	NM	MA.5.5.M.1.1	Understand properties (e.g., length, area, weight, volume) and select the appropriate type of unit for measuring each using both U.S. customary and metric systems.
Chemistry (pgs. 25-41)	NM	MA.5.5.M.2.1	Solve measurement problems using appropriate tools involving length, perimeter, weight, capacity, time, and temperature.
Physics and Math (pgs. 43-63)	NM	MA.5.5.A.2.1	Compute the value of the expression for specific numerical values of the variable.
Physics and Math (pgs. 43-63)	NM	MA.5.5.A.2.2	Use a letter to represent an unknown number.
Physics and Math (pgs. 43-63)	NM	MA.5.5.D.2.1	Organize and display single-variable data in appropriate graphs and representations and determine which types of graphs are appropriate for various data sets.
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2002 Mathematics			
Content Standards			
New Mexico Mathematics			
Grade 6			
Activity/Lesson	State	Standards	
History of Aviation Propulsion (pgs. 5-9)	NM	MA.6.6.M.2.1	Apply various measurement techniques and tools, units of measure, and degrees of accuracy to find accurate rational number representations for length, liquid, weight, perimeter, temperature, and time.
Chemistry (pgs. 25-41)	NM	MA.6.6.M.2.1	Apply various measurement techniques and tools, units of measure, and degrees of accuracy to find accurate rational number representations for length, liquid, weight, perimeter, temperature, and time.
Physics and Math (pgs. 43-63)	NM	MA.6.6.N.1.2	Use equivalent representations for rational numbers (e.g., integers, decimals, fractions, percents, ratios, numbers with whole-number exponents).
Physics and Math (pgs. 43-63)	NM	MA.6.6.N.2.3	Demonstrate the relationship and equivalency among ratios and percents.
Physics and Math (pgs. 43-63)	NM	MA.6.6.N.3.6	Interpret and use ratios in different contexts.

Physics and Math (pgs. 43-63)	NM	MA.6.6.A.1.3	Explain and use symbols to represent unknown quantities and variable relationships.
Physics and Math (pgs. 43-63)	NM	MA.6.6.A.1.4	Explain and use the relationships among ratios, proportions, and percents.
Physics and Math (pgs. 43-63)	NM	MA.6.6.A.2.4	Demonstrate that a variable can represent a single quantity that changes.
Physics and Math (pgs. 43-63)	NM	MA.6.6.A.2.5	Demonstrate how changes in one variable affect other variables.
Physics and Math (pgs. 43-63)	NM	MA.6.6.A.4.1	Represent and explain changes using one-step equations with one variable.
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2002 Mathematics			
Content Standards			
New Mexico Mathematics			
Grade 7			
Activity/Lesson	State	Standards	
History of Aviation Propulsion (pgs. 5-9)	NM	MA.7.7.A.1.6	Solve problems involving rate, average speed, distance, and time.
History of Aviation Propulsion (pgs. 5-9)	NM	MA.7.7.M.1.3	Compare masses, weights, capacities, geometric measures, times, and temperatures within measurement systems.
Types of Engines (pgs. 11-23)	NM	MA.7.7.M.1.3	Compare masses, weights, capacities, geometric measures, times, and temperatures within measurement systems.
Chemistry (pgs. 25-41)	NM	MA.7.7.M.1.3	Compare masses, weights, capacities, geometric measures, times, and temperatures within measurement systems.
Physics and Math (pgs. 43-63)	NM	MA.7.7.A.2.2	Use variables and appropriate operations to write an expression, an equation, or an inequality that represents a verbal description.
Physics and Math (pgs. 43-63)	NM	MA.7.7.A.2.6	Use letters as variables in mathematical expressions to describe how one quantity changes when a related quantity changes.
Physics and Math (pgs. 43-63)	NM	MA.7.7.A.4.1	Use variables and appropriate operations to write an expression, an equation, and/or an inequality that represents a verbal description involving change.
Physics and Math (pgs. 43-63)	NM	MA.7.7.M.1.1	Choose appropriate units of measure and ratios to recognize new equivalences (e.g., 1 square yard equals 9 square feet) to solve problems.
Physics and Math (pgs. 43-63)	NM	MA.7.7.M.2.3	Solve problems involving scale factors, ratios, and proportions.
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2002 Mathematics			
Content Standards			
New Mexico Mathematics			
Grade 8			
Activity/Lesson	State	Standards	
History of Aviation Propulsion (pgs. 5-9)	NM	MA.8.8.A.4.4	Solve multi-step problems that involve changes in rate, average speed, distance, and time.

Types of Engines (pgs. 11-23)	NM	MA.8.8.A.2.3	Represent and analyze mathematical situations and structures using algebraic symbols. Evaluate formulas using substitution.
Types of Engines (pgs. 11-23)	NM	MA.8.8.M.2.7	Solve simple problems involving rates and derived measurements for such properties as velocity and density.
Chemistry (pgs. 25-41)	NM	MA.8.8.A.2.3	Represent and analyze mathematical situations and structures using algebraic symbols. Evaluate formulas using substitution.
Chemistry (pgs. 25-41)	NM	MA.8.8.M.1.1	Understand the concept of volume and use the appropriate units in common measuring systems (e.g., cubic centimeter, cubic inch, cubic yard) to compute the volume of rectangular solids.
Chemistry (pgs. 25-41)	NM	MA.8.8.M.2.4	Apply strategies to determine the surface area and volume of prisms, pyramids, and cylinders.
Chemistry (pgs. 25-41)	NM	MA.8.8.M.2.6	Apply appropriate techniques, tools, and formulas to determine measurements. Estimate volume in cubic units.
Physics and Math (pgs. 43-63)	NM	MA.8.8.A.1.1	Move between numerical, tabular, and graphical representations of linear relationships.
Physics and Math (pgs. 43-63)	NM	MA.8.8.A.2.3	Represent and analyze mathematical situations and structures using algebraic symbols. Evaluate formulas using substitution.
Physics and Math (pgs. 43-63)	NM	MA.8.8.A.2.4	Demonstrate understanding of the relationships between ratios, proportions, and percents and solve for a missing term in a proportion.
Physics and Math (pgs. 43-63)	NM	MA.8.8.A.2.6	Formulate and solve problems involving simple linear relationships, find percents of a given number, variable situations, and unknown quantities.
Physics and Math (pgs. 43-63)	NM	MA.8.8.A.2.7	Use symbols, variables, expressions, inequalities, equations, and simple systems of equations to represent problem situations that involve variables or unknown quantities.
Physics and Math (pgs. 43-63)	NM	MA.8.8.M.2.1	Use ratios and proportions to measure hard-to-measure objects.
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2002 Mathematics			
Content Standards			
New Mexico Mathematics			
Grades 9-12 (Grades: 9-12)			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	NM	MA.9-12.9-12.A.1.8	Represent and analyze mathematical situations and structures using algebraic symbols. Solve formulas for specified variables.
Types of Engines (pgs. 11-23)	NM	MA.9-12.9-12.A.1.14	Evaluate polynomial, rational, radical, and absolute value expressions for one or more variables.

Types of Engines (pgs. 11-23)	NM	MA.9-12.9-12.A.2.5	Explain and use function notation in both abstract and contextual situations and evaluate a function at a specific point in its domain.
Types of Engines (pgs. 11-23)	NM	MA.9-12.9-12.A.3.7	Verify that a point lies on a line, given an equation of the line, and be able to derive linear equations given a point and a slope.
Chemistry (pgs. 25-41)	NM	MA.9-12.9-12.A.1.8	Represent and analyze mathematical situations and structures using algebraic symbols. Solve formulas for specified variables.
Chemistry (pgs. 25-41)	NM	MA.9-12.9-12.A.1.14	Evaluate polynomial, rational, radical, and absolute value expressions for one or more variables.
Chemistry (pgs. 25-41)	NM	MA.9-12.9-12.A.2.5	Explain and use function notation in both abstract and contextual situations and evaluate a function at a specific point in its domain.
Chemistry (pgs. 25-41)	NM	MA.9-12.9-12.A.3.7	Verify that a point lies on a line, given an equation of the line, and be able to derive linear equations given a point and a slope.
Chemistry (pgs. 25-41)	NM	MA.9-12.9-12.G.4.3	Know that the effect of a scale factor k on length, area and volume is to multiply each by k , k^2 and k^3 , respectively.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.1.8	Represent and analyze mathematical situations and structures using algebraic symbols. Solve formulas for specified variables.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.1.9	Represent and analyze mathematical situations and structures using algebraic symbols. Solve quadratic equations in one variable.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.1.14	Evaluate polynomial, rational, radical, and absolute value expressions for one or more variables.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.1.17	Solve linear equations and inequalities in one variable including those involving the absolute value of a linear function.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.2.4	Construct a linear function that represents a given graph.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.2.5	Explain and use function notation in both abstract and contextual situations and evaluate a function at a specific point in its domain.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.2.6	Graph a linear equation and demonstrate that it has a constant rate of change.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.2.7	Understand patterns, relations, functions, and graphs. Graph a linear inequality in two variables.
Physics and Math (pgs. 43-63)	NM	MA.9-12.9-12.A.3.7	Verify that a point lies on a line, given an equation of the line, and be able to derive linear equations given a point and a slope.
Rocket Activity (pgs. 69-75)	NM	MA.9-12.9-12.A.1.8	Represent and analyze mathematical situations and structures using algebraic symbols. Solve formulas for specified variables.